



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,738	09/29/2003	Masahiro Ishiyama	03180.0335	6750
22852	7590	01/05/2010		
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 901 NEW YORK AVENUE, NW WASHINGTON, DC 20001-4413			EXAMINER ALL FARIAD	
			ART UNIT 2446	PAPER NUMBER
			MAIL DATE 01/05/2010	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/671,738

Applicant(s)

ISHIYAMA ET AL.

Examiner

FARHAD ALI

Art Unit

2446

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 August 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-8,10-14 and 16-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-8,10-14 and 16-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Status of Claims:

Claims 1-2, 4-8, 10-14, and 16-18 are pending in this Office Action.

Claims 1, 7, and 13 are amended.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 4-8, 10-14, and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu (US 5,185,860 A) in view of Ford (US 6,101,499 B2) and further in view of Ahmed et al. (US 6,747,961 B1) hereinafter Ahmed.

Claim 1

Wu teaches a name resolution device for managing a name of each node which is connected to a network and whose position on the network can be changed and an address for identifying each node, comprising:

a node information storing unit configured to store a node information containing a name of a node, a network identification information, an interface identification information of a node, for each node ([Wu] Column 5 Lines 58-60, "Block 604 then initializes the database used to permanently store the nodes);

a node information collecting unit configured to collect the node information of other nodes connected to the network, through the network ([Wu] Column 5 Lines 35-41, “Referring now to FIGS. 3 through 5, discovery module 302 is the main module of the system. Discovery calls self-seed block 304 to start the process of building a database about the network, and it calls process-node block 306 to process information about each node that it obtained from self-seed”).

Wu fails to teach a prefix indicating a position of a node on the network; a node information updating unit configured to update the node information stored in the node information storing unit, according to the node information of the other nodes collected by the node information collecting unit, by updating the prefix stored in the node information storing unit by using the interface identification information contained in the node information collected by the node information collecting unit as a key; a function conversion unit configured to convert the interface identification information corresponding to a prescribed node among the node information stored in the node information storing unit, by using a one way function; a comparing unit configured to compare the interface identification information converted by using the one way function which is received from another node, with the interface identification information as converted by the function conversion unit; and a node information providing unit configured to provide the prefix corresponding to the interface identification information compared by the comparing unit to the another node, but without the interface identification information, only when it is judged that the converted interface

identification information from the function conversion unit coincides with the converted interface identification information from the another node at the comparing unit.

However, Ford teaches "A method and computer product for automatically generating an IP network address that facilitates simplified network connection and administration for small-scale IP networks without IP address servers, such as those found in a small business or home network environment. First, a proposed IP address is generated by selecting a network identifying portion (sometimes known as an IP network prefix) while deterministically generating the host identifying portion based on information available to the IP host. For example, the IEEE 802 Ethernet address found in the network interface card may be used with a deterministic hashing function to generate the host identifying portion of the IP address. Next, the generated IP address is tested on the network to assure that no existing IP host is using that particular IP address. If the generated IP address already exists, then a new IP address is generated, otherwise, the IP host will use the generated IP address to communicate over the network. While using the generated IP address, if an IP address server subsequently becomes available, the host will conform to IP address server protocols for receiving an assigned IP address and gradually cease using the automatically generated IP address" (Abstract) in order to "allow hosts to connect to an IP network in a simple fashion" and "reduce the expertise needed by a user connecting an IP host to an IP network" (Column 3 lines 1-5).

It would have been obvious to one of ordinary skill in the art at the time to create the invention of Wu to include a "method and computer product for automatically

generating an IP network address that facilitates simplified network connection and administration for small-scale IP networks without IP address servers, such as those found in a small business or home network environment" as taught by Ford in order to "allow hosts to connect to an IP network in a simple fashion" and "reduce the expertise needed by a user connecting an IP host to an IP network" (Column 3 lines 1-5).

The modified Wu fails to teach under a condition where a prefix corresponding to the interface identification information of the prescribed node stored in another node, not connected to the network, differs from a prefix corresponding to the interface identification information of the prescribed node, shared with the another node and stored in the node information storing unit, and in order to allow the another node to obtain the prefix corresponding to the interface identification information of the prescribed node, shared with the another node and stored in the node information storing unit.

However, Ahmed teaches in Column 12 line 66 to Column 13 line 46, "Location management is concerned with updating mobiles' locations and searching for the mobiles when the system 100 loses track of them. The present invention provides an approach where Home Location Registers (HLRs) and Visitor Location Registers (VLRs) are used to track the locations of individual mobiles. Referring to FIG. 4, a block diagram illustrating elements involved in location management in system 100 is shown. It is to be understood that there are preferably a plurality of HLRs in system 100. While an HLR can reside on any network node, it is to be appreciated that the location and the number of the HLRs may impact the performance of mobility management. Therefore,

depending on the number of mobiles and network nodes in the system, certain network nodes include an HLR. In the case shown in FIG. 4, network node 1 and network node m include an HLR. Each mobile station (MS) is assigned an HLR. A table (e.g., Table I) is stored in the HLR containing the following fields: mobile's host name, mobile's unique ID, mobile's SNLA(s), the time the entry was created and the expiration time" and "The first two fields are unique and serve as keys for searching the table. Note that the HLRs maintain the location of a mobile only through the network node it is currently attached to i.e., the direct network node. Only if the mobile's point of attachment changes, then the mobile's HLR needs to be updated. The relative movement among network nodes does not affect the mobiles' HLRs though it will invoke routing updates. If a mobile moves to another network node, it sends a location update message to its HLR. Also, a network node itself may move out of range, losing all mobiles attached to it. In this case, the mobiles will try to connect with the neighboring nodes. Depending on the availability, some mobiles may be able to connect to the neighboring nodes. To minimize the number of location update messages, each neighboring node sends location update messages to the HLRs of all the newly joined mobiles (via the internode network 108), lumping the mobiles that belong to the same HLR together in one location update message" in order to provide "various methodologies for controlling mobility management in the system 100" (Column 12 lines 56-58).

It would have been obvious to one of ordinary skill in the art at the time to create the invention of the modified Wu to include "location management" as taught by Ahmed

in order to provide "various methodologies for controlling mobility management in the system 100" (Column 12 lines 56-58).

Claim 2

The modified Wu teaches the name resolution device of claim 1, wherein the node information updating unit updates the node information stored in the node information storing unit for which the interface identification information coincides with that of the node information collected by the node information collecting unit but title prefix does not coincide with that of the node information collected by the node information collecting unit ([Wu] Column 8 Lines 25-32, "each IF table entry will have a corresponding IP table entry, and the IP entry is referenced by an index value contained in the IF entry. Block 1204 then determines whether a matching IP record exists. If a matching IP record does exist, block 1204 transfers to block 1206 which moves the physical address from the IP record to the node record in the node list. Block 1208 then updates any state information in the node record").

Claim 4

The modified Wu teaches the name resolution device of claim 1, wherein the function conversion unit uses a hash function as the one way function ([Wu] Column 9 Lines 5-7, "Referring now to FIG. 15, after entry, block 1502 performs a hash operation on the IP address to create a pointer into the node list").

Claim 5

The modified Wu teaches the name resolution device of claim 1, further comprising:

a prefix conversion unit configured to convert the prefix into a position identification information which is in one-to-one correspondence to the prefix; wherein the node information storing unit stores the position identification information obtained by the prefix conversion unit, as the prefix **([Wu] Column 9 Lines 7-11, “Block 1504 then allocates memory for a node record, and block 1506 stores the data available for the node into the node record at the location pointed to by the hashed IP address”).**

Claim 6

The modified Wu teaches the name resolution device of claim 1, further comprising:

an address generation unit configured to generate an IPv6 address dynamically, according to the node information stored in the node information storing unit **([Wu] Column 10 Lines 40-43, “FIG. 10 shows a flowchart of the process-IFIP module block 310 (FIG. 3). The IF and IP tables are available in a node to define the translation of physical addresses to IP addresses”).**

Claim 7

The modified Wu teaches the name resolution method of claim 7 for the same reasoning as claim 1 as they are analogous in scope (see claim 1 rejection).

Claim 8

The modified Wu teaches the name resolution method of claim 7, wherein the updating updates the node information stored by the storing for which the interface identification information coincides with that of the node information collected by the collecting but the prefix does not coincide with that of the node information collected by the collecting **([Wu] Column 8 Lines 25-32, “each IF table entry will have a corresponding IP table entry, and the IP entry is referenced by an index value contained in the IF entry. Block 1204 then determines whether a matching IP record exists. If a matching IP record does exist, block 1204 transfers to block 1206 which moves the physical address from the IP record to the node record in the node list. Block 1208 then updates any state information in the node record”)**.

Claim 10

The modified Wu teaches the name resolution method of claim 7, wherein the converting uses a hash function as the one way function **([Wu] Column 9 Lines 5-7, “Referring now to FIG. 15, after entry, block 1502 performs a hash operation on the IP address to create a pointer into the node list”)**.

Claim 11

The modified Wu teaches the name resolution method of claim 7, further comprising:

converting the prefix into a position identification information which is in one-to-one correspondence to the prefix; wherein the storing stores the position identification information obtained by the converting, as the prefix ([Wu] Column 9 Lines 7-11, **“Block 1504 then allocates memory for a node record, and block 1506 stores the data available for the node into the node record at the location pointed to by the hashed IP address”**).

Claim 12

The modified Wu teaches the name resolution method of claim 7, further comprising: generating an IPv6 address dynamically, according to the node information stored by the storing ([Wu] Column 10 Lines 40-43, **“FIG. 10 shows a flowchart of the process-IFIP module block 310 (FIG. 3). The IF and IP tables are available in a node to define the translation of physical addresses to IP addresses”**).

Claim 13

The modified Wu teaches the computer-readable medium of claim 13 for the same reasoning as claim 1 as they are analogous in scope (see claim 1 rejection).

Claim 14

The modified Wu teaches the computer-readable medium of claim 13, wherein the updating includes updating the stored node information for which the interface identification information coincides with that of the collected node information but the prefix does not coincide with that of the collected node information (**[[Wu] Column 8 Lines 25-32, “each IF table entry will have a corresponding IP table entry, and the IP entry is referenced by an index value contained in the IF entry. Block 1204 then determines whether a matching IP record exists. If a matching IP record does exist, block 1204 transfers to block 1206 which moves the physical address from the IP record to the node record in the node list. Block 1208 then updates any state information in the node record”**).

Claim 16

The modified Wu teaches the computer-readable medium of claim 13, wherein the converting uses a hash function as the one way function (**[[Wu] Column 9 Lines 5-7, “Referring now to FIG. 15, after entry, block 1502 performs a hash operation on the IP address to create a pointer into the node list”**).

Claim 17

The modified Wu teaches the computer-readable medium of claim 13, further comprising:

converting the prefix into a position identification information which is in one-to-one correspondence to the prefix; wherein the storing includes storing the converted

position identification information as the prefix (([Wu] Column 9 Lines 7-11, “Block 1504 then allocates memory for a node record, and block 1506 stores the data available for the node into the node record at the location pointed to by the hashed IP address”).

Claim 18

The modified Wu teaches the computer-readable medium of claim 13, further comprising:

generating an IPv6 address dynamically, according to the stored node information (([Wu] Column 10 Lines 40-43, “FIG. 10 shows a flowchart of the process-IFIP module block 310 (FIG. 3). The IF and IP tables are available in a node to define the translation of physical addresses to IP addresses”).

Response to Arguments

3. Applicant's arguments with respect to claims 1, 7, and 13 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FARHAD ALI whose telephone number is (571)270-1920. The examiner can normally be reached on Monday thru Friday, 7:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey C. Pwu can be reached on (571) 272-6798. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Farhad Ali/
Examiner, Art Unit 2446

/Benjamin R Bruckart/
Primary Examiner, Art Unit 2446